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Title : SURVIVAL, MOVEMENTS, AND SITE FIDELITY OF JUVENILE PACIFIC HARBOR SEAL (PHOCA VITULINA RICHARDSI) ALONG CENTRAL CALIFORNIA

Category : Ecology

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Abstract : Abundance and age-structure of pinniped populations are driven by several life history parameters, but especially by juvenile survival. To determine first-year survival of harbor seal pups and compare their movements with those of subadult seals, we captured and radio-tagged 23 recently-weaned pups and 22 subadults at hauling sites near Monterey Bay and Point Reyes, California between May 2000 and February 2002. Because starvation is a major cause of pup mortality, we predicted that the first three months post-weaning were most critical for survival. We also expected pups to travel greater distances than subadult seals and that subadults would exhibit greater site fidelity to hauling sites. Home range size was used as a proxy for site fidelity.

Survival estimates of weaned pups fell within predicted values (2000 $\hat{s}[t] = 0.500$, 2001 $\hat{s}[t] = 0.462$), however post-weaning mortality was greatest within the first five months during 2000 and within the first six months during 2001. Maximum distance traveled for weaned pups ranged from 11.23 to 587.28 km, whereas, maximum distance traveled for subadults ranged from 10.0 to 209.16 km. As expected, weaned pups traveled a greater mean maximum distance than subadult seals ($t_{42} = 2.553$, $P = 0.014$). Weaned pups also had a significantly larger mean home range size compared with subadult seals (weaned pups $\bar{x} = 60.013 \text{ km}^2$, $SD = 53.099$, subadult seals $\bar{x} = 6.39 \text{ km}^2$, $SD = 7.118$; 95% fixed kernel home range $F_{1,28} = 20.379$, $P = 0.000$).

Survival of harbor seal pups may be most dependent on the ability to locate and successfully exploit prey resources. The search for abundant prey may explain the larger home range of pups compared with immature seals. Many pups also displayed a northward movement, possibly in response to robust food resources within the California Current System, north of where they were captured.